

## Morphology and systematic status of *Coluber karelini mintonorum* Mertens, 1969 (Reptilia: Squamata: Colubrinae)

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**Morphology and systematic status of *Coluber karelini mintonorum* Mertens, 1969 (Reptilia: Squamata: Colubrinae).** - Minton's racer is a valid species of the racer genus *Platyceps* Blyth. It is, so far, only reported from southern Afghanistan and Baluchistan (Iran, Pakistan). Morphologically, *P. mintonorum* (Mertens) differs from all potentially sympatric *Platyceps* spp. Baluchi records of *P. cf. rhodorachis* (Jan) are in need of further studies.

**Keywords:** *Platyceps mintonorum* - species status - morphology - Afghanistan - Baluchistan - *Platyceps* spp. - sympatry.

### INTRODUCTION

From the systematic point of view, species of the genus *Platyceps* Blyth, 1860 (see Schätti & Utiger, 2001) are among the most difficult and intriguing taxa within Old World racers. This is particularly true for *P. rhodorachis* (Jan, 1863) and the type species, *P. ventromaculatus* (Gray, 1834), reported from northern India to the Near East (e.g., Smith, 1943; Minton, 1966). They are commonly considered to be closely related to *P. karelini* (Brandt, 1838) from the eastern Caspian region to Pakistan (e.g., Terentjev & Chernov, 1949; Khan, 1997).

The taxonomic history of Sindo-Arabian *Platyceps* spp. is tricky, resulting in considerable confusion about species concepts as well as mixed-up morphological and distribution data. Leviton (1959), for instance, noted that the ranges of *P. karelini*, *P. rhodorachis*, and *P. ventromaculatus* “from southwestern Asia [...] overlap most extensively”, and “they exhibit the same ranges of morphological variation, the same color pattern variations, and are found in similar environmental situations”, concluding that “their recognition is based upon characters of rather nebulous taxonomic value, and their present partition is not entirely satisfactory.”

Minton (1966) could not identify various racers from Chagai District in Baluchistan, Pakistan, “with Afghan specimens reported by Leviton and Anderson (1961) or with Iranian specimens of *rhodorachis* reported by Steven C. Anderson (1963).” He considered that these Baluchi snakes “may represent an undescribed form, perhaps related to *rhodorachis*” (Minton, 1966: 172). A few years later, *Coluber karelini mintonorum* Mertens, 1969, described on the basis of 17 specimens from Chagai

and Kharan District in southwest Pakistan, was named after Sherman A. Minton, Jr., and his wife Madge.

Referring to the status of the “Variegated Sand Racer”, Minton (1966) noted that “its relationships to other racers of the Middle East and North Africa will not be clear until monographic treatment of the group is undertaken.” Although Khan (1997) started “a new approach” on “the *Coluber karelini-rhodorachis-ventromaculatus* species complex”, and despite the description of new obscure taxa (Khan & Khan, 2000), the remarks of Leviton (1959) and Minton (1966) regarding the systematics of Saharo-Sindian *Platyceps* spp. hold, with some reservation, to the present day. *P. rhodorachis* auct., reported from the Himalayas to the western Sahara, is a species complex, and Middle East populations of *P. ventromaculatus* auct. may be conspecific with *P. rogersi* (Anderson, 1893) (Schätti & McCarthy, 2004; Schätti, 2005).

This is the first in a series of papers dedicated to Sindian taxa of the *Platyceps rhodorachis-ventromaculatus* group of species. The objective of this investigation is to analyse the intraspecific variation and distribution of Mintons’ racer, assess the systematic status of this taxon, and elaborate its morphological distinction from presumably closely related species.

## MATERIAL AND METHODS

The study is based on 33 specimens including 14 of the 16 paratypes and Minton’s (1966) “Variegated Sand” racers except SAM 695 and UMMZ 123436. An additional individual, CAS 120543 from “10 km N Darweshan” (Afghanistan), is in very poor condition, and no data were ascertained. The material was borrowed from the American Museum of Natural History, New York (AMNH), California Academy of Sciences, San Francisco (CAS), Field Museum of Natural History, Chicago (FMNH), Muséum d’histoire naturelle, Genève (MHNG), and the Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main (SMF). Further acronyms used in the text are BMNH (The Natural History Museum, London, formerly British Museum of Natural History), NMW (Naturhistorisches Museum, Wien), SAM (collection of Sherman A. Minton), and UMMZ (University of Michigan, Museum of Zoology, Ann Arbor).

Morphological terms and cephalic measurements are explained in Schätti (1988) and Schätti & McCarthy (2004). Numbers in parenthesis indicate intraspecific variation. Cephalic measurements were ascertained with a calliper. The head length is in a straight line from the anterior tip of the rostral to the posterior end of the median suture of the parietals. The head width equals the distance between the lateral edge of the supraoculars at the middle of the eye. The frontal length is along the midline from the anterior tip to the posterior border, and its width equals the maximum distance between the lateral projections. The internasal, prefrontal, and parietal length were measured along their respective median suture. The distance from the nostril to the eye is the shortest span from the posterior border of the external nose opening to the orbit.

Scale formulae give the number of longitudinal dorsal scale rows (dsr) at the 20<sup>th</sup> ventral, midbody, and five ventrals in front of the vent. The reduction pattern is expressed in terms of ventrals and as a percentage of their total number (%ven), based on the average of the right and left side. Maxillary teeth were examined on the right

bone. The length of the hemipenis *in situ* and the insertion of the *Musculus retractor penis magnus* are expressed in absolute numbers of subcaudals and as a percentage thereof (%sub).

Scientific names of the taxa discussed in this paper are usually given in full only at their first appearance in the text. Coordinates are from Mertens (1969) and, in the case of Afghanistan, the GEONET database (<http://earth-info.nima.mil>).

## RESULTS

### *Platyceps mintonorum* (Mertens, 1969) comb. n. – Minton's racer

*Coluber karelini* Brandt, 1838 [partim]. - Leviton, 1959: 454, Tb. IV ("Chah-i-Angir", CAS 84630-33); Leviton & Anderson, 1961: 275 (same material [Chah-i-Anjir])<sup>1)</sup>.

*Coluber* sp. - Minton, 1966: 122 [172], Pl. 24.2 [Nushki] (vicinity of Nushki, "2 miles northwest of Ahmad Wal", and "Chagai" [Nushki]: AMNH 87460, 88464, 96222, FMNH 140277-78, SAM 695, and UMMZ 123436 [last two not examined]).

*Coluber karelini mintonorum* Mertens, 1969: [3, 10] 56, Fig. 17 [holotype], Tb. [unnumbered]. - "Zangi-Nawar" [29°26'N 65°47'E], Chagai District, Baluchistan, Pakistan [SMF 62942, ♂, not examined] (paratypes from Dalbandin, Kharan, Nok Kundi, Nushki, "between Nushki and Dalbandin", and Surdehgari [not located]: SMF 62923, 62931-37, 62939, 62943 [not examined], 62944-48, 62949 [not examined]).

*Coluber karelini* [partim]. - Gasperetti, 1988: 219, Fig. 29 [dorsal and lateral view of head, dorsal section of body scales: "Chah-i-Angir", Nushki: CAS 84632, 101593] (see Discussion); Clark, 1990: 33 [35], Tb. [unnumbered] (vicinity of Darweshan, "40 Km. SE Kandahar": CAS 120541, 120715-17).

*Coluber* sp. - Latifi, 1991: [67] 104 [footnote 3] (see Discussion).

*Coluber ventromaculatus* Gray, 1834 [partim]. - Disi, 1993: 111 ("Pakistan, Belouchistan": "MHNG 1359.12" [MHNG 2443.12]).

*Coluber karelini* [partim]. - Khan, 1997: 56 (see Discussion).

*Coluber rhodorachis* (Jan, 1863) [partim]. - Khan, 1997: 56 (see Discussion).

*Coluber karelini mintonorum*. - Latifi, 2000: 263 ("Sistan and Baluchistan").

*Material examined* (an asterisk denotes specimens used for the calculation of head indices; see also Material and Methods). AFGHANISTAN: CAS 84630-33 ("Chah-i-Angir" [Chah-i-Anjir], 31°41'N 64°20'E, ♂, 3 ♀ ♀), 120541 (10 km N Darweshan, ca. 31°00'N 64°10'E, ♀), 120715 ("10-20 km NE Darweshan", ♀), 120716-17 ("40 km SE Kandahar" [31°36'N 65°42'E], ♂ ♀). PAKISTAN (Baluchistan: Chagai and Kharan districts): \*AMNH 87460 ("near Nushki", ca. 29°33'N 66°01'E, ♀), \*88464 (2 km NW Ahmadwal, ca. 29°25'N 65°56'E, ♂), 96222 ("2 miles east of Nushki", ♀); \*CAS 101498, \*101592-93 (Nushki, ♂ ♂, ♀); \*FMNH 140277-78 (Nushki, ♀ ♀); \*MHNG 2443.11-12 and \*2629.98 ("Baluchistan", ♂, ♀ ♀); \*SMF 62923 (Dalbandin, 28°53'N 64°26'E, ♀ paratype), \*62931-32 ("6 Meilen nördlich Nushki", ♀ ♀ paratypes), 62933 (Kharan, 28°34'N 65°25'E, ♀ paratype), 62934 (Nushki, ♀ paratype), 62935 ("between Nushki and Dalbandin", ♂ paratype), 62936-37 (Nushki, ♂ ♀ paratypes), \*62939 (Nok Kundi, 28°47'N 62°44'E, ♂ paratype), \*62944-48 (Dalbandin, 2 ♂ ♂, 3 ♀ ♀ paratypes).

<sup>1)</sup> Leviton & Anderson (1961) discussed seven specimens from Chah-i-Anjir (Dasht-i-Margo Desert) reported earlier as *Coluber karelini* (Leviton, 1959). This material was re-examined by Sergius A. Chernov (St. Petersburg) who referred CAS 84634-36 (see Appendix) to *Platyceps rhodorachis ladacensis* (Anderson, 1871) and CAS 84630-33 to *P. karelini* (as *Coluber* auct.). However, scale data, the description of the dorsal colour pattern, and accession numbers were mixed up in Leviton & Anderson (1961) as already noted by Mertens (1969: 56).

## MORPHOLOGY

Snout in dorsal view comparatively pointed, rostral usually projecting "and strongly concave on under side" (Minton, 1966; "auf der Unterseite stark ausgehöhlt", Mertens, 1969), 1.25-1.56 times broader than high <sup>2)</sup>. Internasals shorter than prefrontals, nearly equal length in FMNH 140278, SMF 62923, 62944, and the holotype (fide Mertens, 1969). SMF 62949 (not examined) with two pairs of internasals ("in zwei hintereinanderstehenden Paaren ausgebildet [...], wodurch das Rostrale hinten einen spitzen Fortsatz aufweist", Mertens, 1969; see footnote 2). Frontal 1.23-1.39 times longer than broad, 1.23-1.70 times longer than internasals and prefrontals, 0.87-1.07 times as long as parietals. Posterior border of the latter somewhat indented towards the median suture. Head 1.90-2.25 times longer than broad.

Nostril-eye distance 0.79-0.96 times length of internasals and prefrontals. Loreal rectangular or pentagonal, usually as long as high and situated on second and third supralabial (third in SMF 62931, 62948); coalesced with nasal in SMF 62933. Preocular single, paired or, sometimes, with an incomplete but distinct suture (e.g., in CAS 120541, on right side of CAS 101498, and left in SMF 62945) <sup>3)</sup>; in contact with frontal except on left side of SMF 62944. Anterior subocular sometimes quite large (e.g., CAS 84631), slightly larger than posterior subocular in AMNH 87460; 2 anterior suboculars in SMF 62933 (first larger), 62942 (left, holotype), and 62949 (fide Mertens, 1969).

Normally 9 supralabials (last 3 larger), 8 on right side of holotype (Mertens, 1969), 10 in AMNH 87460 (left side); fifth, fifth and sixth, sixth, or none in contact with eye. Posterior subocular usually present and slightly larger than anterior (see above); absent in CAS 84630, FMNH 140277, SMF 62933 as well as on one side in CAS 120715-16, MHNG 2443.11, 2629.98, SMF 62937, and 62939; 2 posterior suboculars on one side in SMF 62935, 62939, and 62948, anterior small. Two postoculars (see footnote 3) and anterior temporals; 2 or 3 (4) scales in second row; anterior temporals comparatively large in SMF 62937, small in CAS 84632, and lower scale generally larger (upper particularly small in SMF 62933).

Usually 10 (9-11) sublabials, the 4 anterior in contact with first inframaxillary, sixth (fifth) largest. Anterior chin shields shorter and usually broader than posterior pair; the latter anteriorly separated by 2 rows of scales and usually 4 to 5 (3) posteriorly. Gulars in 4 (3-5) oblique rows between the posterior inframaxillaries and the first ventral.

Ventrals 221-240 (♂♂ 225-231, ♀♀ 221-240); anal scute divided; 110-127 (♂♂ 110-122, ♀♀ 113-127) paired subcaudals; sum of ventrals and subcaudals 336-360 (336-350 and 337-360, respectively). Up to 242 ventrals and 128 subcaudals according to Clark (1990) and Latifi (1991), respectively <sup>4)</sup>.

<sup>2)</sup> Mertens (1969: 58) noted that the shape of the rostral is a variable feature ["Andererseits gibt es unter *mintonorum*, vor allem unter den älteren weiblichen Tieren, vereinzelt Individuen, bei denen die Schnauze vorne erheblich abgerundet ist (z. B. bei dem großen ♀ SMF 62949 mit der anomalen Rostralbeschreibung)"].

<sup>3)</sup> Minton (1966) and Mertens (1969) included the anterior and posterior subocular(s) in their number of preoculars and postoculars, respectively.

<sup>4)</sup> Ventral data in Minton (1966), Mertens (1969), and Clark (1990) include preventrals.

Dorsals with paired apical pits, in 19-19-13 rows except SMF 62944 which has 21 longitudinal dsr from ventrals 47 (right) and 49 (left) to 105 and 101, respectively (increase and decrease involving row 9); this female reduces the number of dsr at ventral 142 (rows 8+9, 61%ven), 147 (3+4, 63%ven), and 187 (6+7, 81%ven). In males, the first and second reduction occur between ventrals 126 and 136 (55-60%ven) and 130-137 (57-60%ven), respectively; the third (last) reduction is situated at the level of ventrals 149-169 (67-74%ven). In females (except SMF 62944), the values are 121-139 (55-59%ven), 127-145 (56-61%ven), and 144-171 (64-72%ven), respectively. The sequence of the first and second reduction is variable but, in most cases, the anterior is paravertebral (rows 7+8 in males except CAS 101593 [8+9, left], 7-9 in females); rows 3+4 (2+3 on left side in CAS 84632, 4+5 on left in CAS 101593) are involved in the lateral reduction. The third is paravertebral, or vertebral (i.e., rows 7+8) in four females (CAS 84632, 120717, MHNG 2629.98, SMF 62931). Without specification, Minton (1966) indicated an increase to 21 dsr on the anterior trunk in two specimens and a reduction to 11 dsr in front of the vent in one.

Longest specimens 1110 + 360 mm (♂, SMF 62942, holotype) and 1170 mm snout-vent length (incomplete tail 287 mm, ♀, SMF 62949) according to Mertens (1969: Tb.). Smallest individual (AMNH 96222) 295 + 102 mm. Tail/body length ratio in holotype (♂) 0.32, 0.33-0.36 for remaining ♂♂, and 0.32-0.37 in ♀♀. To conclude from these data, the snout-vent length of 1190 mm for the holotype as stated in the original diagnosis (Mertens, 1969) is most probably not correct.

Dorsal ground colour light tan to pale grey, "top of head often dull reddish, with shields narrowly edged with cream" (Minton, 1966). A dark, light-edged spot between the frontal and parietal and along the parietal suture in the holotype. Circumocular scales light (yellowish) except for a dark blotch below the eye. Temporals yellowish, with irregular darker marks. Dorsal scales dark-edged, forming cross-bars or two series of juxtaposed and slightly transverse paravertebral bars. Dark flecks may also occur along the lower flank. SMF 62943 (not examined) with a more distinct pattern on the anterior portion of the trunk (Mertens, 1969). Venter and underside of tail "immaculate pearly gray to white" (Minton, 1966) or yellowish (e.g., CAS 101592-93).

Maxillary with 14-16 teeth, anterior series subsodont, diastema distinct, posterior two teeth enlarged, last offset laterad. Palatine teeth 9. Hemipenis subcylindrical, *sulcus spermaticus* simple; spinose throughout, apical area calyculate, apex (*in situ*) at subcaudals 8-11 (7-10%sub); insertion of *Musculus retractor penis magnus* at subcaudals 26-28 (21-25%sub).

#### DISTRIBUTION AND ECOLOGY

Given the published records and collecting sites of the examined specimens, Minton's racer seems to be restricted to southern Afghanistan, southeastern Iran (Sistan-va-Baluchistan), and Baluchistan province (Chagai and Kharan districts) in Pakistan (Fig. 1). "Surdehgari", the collecting site of a paratype (SMF 62943), could not be located.

The specimens reported by Minton (1966) "have all been collected in the desert basin near Nushki." Mertens (1969) recorded the type series of *Coluber karelini mintonorum* from the sandy districts of Chagai and Kharan. Material from southeastern



PLATE 1 - *Platyceps mintonorum* MHNG 2443.12 (♂) from Baluchistan Province, Pakistan.

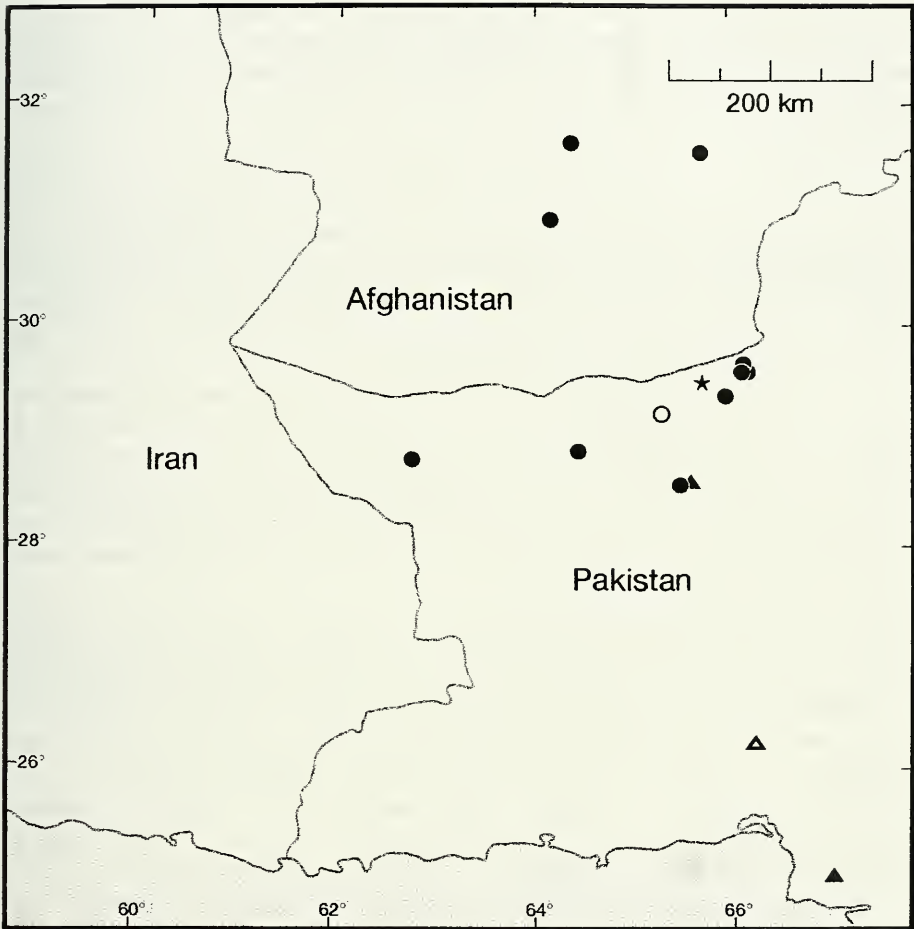


FIG. 1. Known distribution of *Platyceps mintonorum*. The localities (●) are based on the examined material and Zangi Nawar, the type locality (★). Triangles (▲) mark three collecting sites of *P. cf. rhodorachis* (see Discussion) from the "Gandrani Caves" (SAM 679), Band Murad Khan (SMF 62928), and Kharan (SMF 62938). Open symbols denote two approximate locations ("between Nushki and Dalbandin" and "Gandrani Caves").

Iran "in the collection of the State Razi Institute near Teheran" (Minton, 1966) is from "Sistan and Baluchistan province (Zabol, Zahedan)" (Latifi, 1991).

Minton's (1966) Nushki series was obtained "in relatively flat sandy country with sparse vegetation. All were in the open, three being taken between sunrise and midmorning and two between sunset and darkness. They are very quick, alert snakes and savage biters. One captive fed on sand lizards (*Acanthodactylus*)." According to Clark (1990), Minton's racer is "Very common at the Darweshan and Kandahar sites" where it was "found both in non-sandy and sandy biotopes, both firm and loose sands" between 800 and 1'060 m.

One specimen from the vicinity of Kandahar [Qandahar] "was found lying in the open so bloated with a large gecko (*Teratoscincus*) that it had just consumed that it was incapable of movement" (Clark, 1990: 28, 33). Latifi (1991) reported this species to feed on "mice in captivity."

## DISCUSSION

Based on head shape, viz., a pointed ("zugespitzt") snout, and the presence of a posterior subocular or, sometimes, a complete row of scales separating the eye from the supralabials, Mertens (1969) considered Mintons' racer a subspecies of *Platyceps karelini* (Brandt). This opinion was reached in spite of considerable ("erhebliche") differences in ventral and subcaudal scale counts as well as a marked fading of the head and dorsal colour pattern vis-à-vis Karelin's racer.

Morphologically, *Platyceps mintonorum* and *P. karelini* are easily separable. Apart from differences in body length (less than 750 mm snout-vent length in the latter), dorsal colour pattern (transverse black blotches in *karelini*), and hemipenis features (length, insertion of retractor muscle; in prep.), these species differ quantitatively in a number of head measurements and scale characters including the dorsal scale reduction pattern of males, and they are most distinct in ventral and subcaudal counts and the sum thereof (Tbs 1-2).

TABLE 1. Head measurements and cephalic scales in *Platyceps mintonorum* and *P. karelini*. Rostral length/height, frontal length/width, length of frontal/internasals and prefrontals, condition of preocular (1: single, 2: paired), number of supralabials in contact with eye, and posterior subocular (0: absent, 1: present). Unusual condition in parenthesis; rare states in brackets. Data for *P. karelini* are based on 19 specimens from Afghanistan, Iran, and Pakistan (see Appendix).

character / taxon	rostral length	frontal length	frontal / internas. + prefr.	preocular	supralabial cont. eye	posterior subocular
<i>P. mintonorum</i>	1.25-1.56	1.23-1.39	1.23-1.70	1 or 2	0-2	1 (0)
<i>P. karelini</i>	1.50-1.76	1.36-1.53	1.18-1.45	1 [2]	1 [0]	1

TABLE 2. Body scale characters in *Platyceps mintonorum* and *P. karelini* (see Tb. 1 and Discussion). Ventrals, subcaudals, and sum of ventrals and subcaudals in ♂♂ and ♀♀, as well as position of second reduction (from 17 to 15 dsr) in ♂♂, expressed in terms of ventrals and as a percentage of their total number (%ven). See Morphology for ventral and subcaudal data of *P. mintonorum* reported by Clark (1990) and Latifi (1990).

character / taxon	ventrals		subcaudals		sum		second reduction (♂♂)
	♂♂	♀♀	♂♂	♀♀	♂♂	♀♀	
<i>P. mintonorum</i>	225-231	221-240	110-122	113-127	336-350	337-360	130-137 (57-60)
<i>P. karelini</i>	193-207	202-212	90-105	86-106	290-311	292-314	119-130 (60-64)

Higher body scale counts for *Platyceps karelini* than reported here are given, for instance, for a female from the Kavir Desert in Iran with 216 ventrals (Nilson & Andrén, 1981) and an unsexed specimen from Mastung, Pakistan, with 110 subcaudals (Khan & Ahmed, 1987). Without further evidence ("nach Literatur-Angaben"), Mertens (1969) noted up to 220 ventrals and 117 subcaudals for *P. karelini*. These data exceed by far authentic values and, therefore, seem highly unlikely. Khan's (1997) total counts (282-317) for this species were probably added up from the extremes of ventrals (192-207) and subcaudals (90-110).



Ultimately, alleged parapatric ranges led Mertens (1969) to refer the new taxon to *Platyceps karelini* (“Die neue Form ist [...] nichts anderes als ein Vikariant von *karelini*, der mit dieser Natter kaum [sic] sympatrisch auftritt”) <sup>5)</sup>. However, sympatry of Mintons’ racer and *P. karelini* is documented, for instance, near Darzi Chah, roughly 65 km west of Nushki (SMF 64629, Mertens, 1969), probably in Afghanistan (see Appendix). There, these taxa occur together, among other places, at Chah-i-Anjir (CAS 84634-35, see footnote 1, Appendix, and below).

Mertens (1969) thought that at least some of the specimens reported by Boulenger (1889) as “*Zamenis karelini*” from the border region in Afghanistan (“aus dem afghanischen Grenzgebiet”) probably belonged to Mintons’ racer. However, three specimens from the “Helmund River” and “between Tirphul and Kilki” (Herat province) collected by the Afghan Boundary Commission and deposited in the BMNH collection with 200-209 ventrals and 86-106 subcaudals (Boulenger, 1893: 402) are not *Platyceps mintonorum* (unpubl. data).

Minton (1966) correctly stated that “Although I originally identified these Nushki snakes as *karelini* on the basis of circumocular lepidosis, the two are quite different in pattern and in ventral and subcaudal counts.” That author emphasised that “the regular presence of a third preocular, high ventral count, and body pattern” as well as a “more pointed” snout distinguish the “Variegated Sand Racer” (*Platyceps mintonorum*) from *P. karelini* (Brandt), *P. rhodorachis* (Jan), and *P. ventromaculatus* (Gray) (see footnotes 2-3 and 5). Minton (1966) concluded that the “nearest relative appears to be *rhodorachis*.” Latifi (1991), most likely following this quotation, considered Mintons’ racer to be “a valid taxon but probably not a subspecies of *karelini*. It may be closer to *rhodorachis*.”

Khan (1997) believed that two *Platyceps mintonorum* figured in Gasperetti (1988: Fig. 29), i.e., CAS 84632 from Chah-i-Anjir (Afghanistan, see footnote 1) and CAS 101593 from Nushki, were *P. karelini*, and that “specimens from this region have neither dorsal pattern nor orbito-labial and temporal stripes as vivid as observed in *C.[oluber] karelini* from Quetta-Peshin, Baluchistan.” According to Khan (1997), Mintons’ racer was “erected [...] on similar *C. rhodorachis* from the Baluchistan highland.” This erroneous conclusion resulted from enormous confusion as to the systematics of certain Sindian *Platyceps* spp.

Minton (1966) and Mertens (1969) stated that, apart from head shape and the presence or absence of the posterior subocular, *Platyceps mintonorum* and *P. rhodorachis* auct. differ in their habitus (*rhodorachis* is more slender). However, the specific allocation of some female Baluchi racers referred to *P. rhodorachis* and their

<sup>5)</sup> From a comparison with *Platyceps rhodorachis* and *P. ventromaculatus* (as *Coluber* spp.) “ziehe ich den Schluß, daß *mintonorum*, ein Vikariant von *karelini*, am besten als Subspecies von dieser Natter aufzufassen ist. Die kleine Lücke zwischen der Plusvariante bei *karelini* (220) und der Minusvariante bei *mintonorum* (227) wird zweifellos durch weitere Funde überbrückt werden. Bei der Zahl der Subcaudalia ist das bereits der Fall [...]. Auf den Zeichnungsunterschied ist kein großer Wert zu legen” (Mertens, 1969: 59). “In der äußeren Erscheinungsform herrscht zwischen der neuen Form und *karelini*, abgesehen von der Zeichnung, eine recht große Übereinstimmung. Der spitze Kopf ist bis zu einem gewissen Grade auch *karelini* eigen [...]. Er ist stärker zugespitzt und vor allem die Schnauze stärker vorspringend als bei *rhodorachis*, *ventrinaculatus* [sic] oder [*Hemorrhöis*] *ravergieri*, aber keinesfalls stärker als bei den meisten *karelini*” (Mertens, 1969: 58).

distinction from *P. mintonorum* require some comments<sup>6)</sup>. This is the case with SAM 679 from the “Kud River [approx. 26°17'N 66°13'E] near the Las Bela-Kalat border” (“Gandrani Caves”), SMF 62938 from Kharan, and SMF 62928 (subadult) from Band Murad Khan (25°06'N 67°00'E) on the Hab River (Fig. 1).

SAM 679 (not examined) shows “a pattern more suggestive of this form [i.e., *Platyceps mintonorum*] than of coastal *rhodorachis*, and circumocular scales as in *rhodorachis*” (Minton, 1966: 123). The latter feature, i.e., the lack of a posterior subocular, does not allow a positive identification of that species and a distinction from *P. mintonorum* (see Morphology). SMF 62928 (237 ventrals, 124 subcaudals) and 62938 (236 and 115, respectively; see footnote 4) possess, as SAM 679, a single anterior subocular and two supralabials (fifth and sixth) entering the eye (i.e., no posterior subocular).

The dorsal colour pattern of SMF 62938 is surprisingly similar (“Erstaunlich ähnlich”) to a female *Platyceps mintonorum* (SMF 62933) obtained at the same locality (Kharan) but the specimen lacks a posterior subocular and the rostral is not projecting (“zeichnet sich [...] außer durch die bezeichnende Subocular-Pholidose durch ein kleines, nicht vorspringendes Rostrale aus”, Mertens, 1969: 59). However, that author emphasised that, occasionally, the snout of Minton's racer is considerably rounded, particularly in large females (see footnote 2). SMF 62938 has the loreal and nasal fused on the left side.

SMF 62928 is remarkable for somewhat elevated head indices vis-à-vis *Platyceps mintonorum* (i.e., frontal 1.73 times longer than internasals and prefrontals, head length/width 2.34, nostril-eye distance 1.0), the shape of the posterior border of the parietals (straight instead of indented), a tail/body ratio of 0.38 (snout-vent and tail length 365 + 140 mm, respectively), and dsr reduction pattern, viz., the second fusion involving the fourth and fifth (instead of third and fourth) rows.

For the time being, it cannot be ruled out that SMF 62928 and/or 62938 belong to *Platyceps mintonorum*, or that this species intergrades with *P. rhodorachis* auct. By all means, their systematic status requires further studies.

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<sup>6)</sup> Khan & Khan's (2000) description of three new racer taxa from Pakistan begs a thorough response (in prep.). In any case, *Coluber ventromaculatus bengalensis* Khan & Khan, 2000 and *C. ventromaculatus khanorum* Barabanov, 2002 (*nomen novum*) are objective junior synonyms of *C. ventromaculatus* Gray, 1834. The description of *C. ventromaculatus indusai* Khan & Khan, 2000 violates rules of the code (e.g., Art. 16.4, ICZN, 1999; Hallermann *et al.*, 2001).

## REFERENCES

- ANDERSON, J. 1871. A list of the reptilian accession to the Indian Museum, Calcutta, from 1865 to 1870, with a description of some new species. *Journal of the Asiatic Society of Bengal* [2] 40 (1): 12-39.
- ANDERSON, J. 1893. On a new species of *Zamenis* and a new species of *Bufo* from Egypt. *The Annals and Magazine of Natural History* [6] 12: 439-440.
- ANDERSON, S. C. 1963. Amphibians and reptiles from Iran. *Proceedings of the California Academy of Sciences* [4] 31 (16): 417-498.
- BARABANOV, A. 2002. Taxonomic status of *Coluber ventromaculatus bengalensis* Khan et Khan, 2000 (Reptilia: Squamata: Colubridae). *Russian Journal of Herpetology* 9 (3): 255.
- BLYTH, E. 1860. Report of Curator, Zoological Department. *Journal of the Asiatic Society of Bengal* 29 (1): 87-115.
- BOULENGER, G. A. 1889. Reptiles and batrachians (pp. 94-106). In: AITCHISON, J. E. T. The zoology of the Afghan Delimitation Commission. *Transactions of the Linnean Society of London* [2] 5 (3): 53-142.
- BOULENGER, G. A. 1893. Catalogue of the snakes in the British Museum (Natural History). Vol. 1. London, Trustees of the British Museum (Natural History), XIII + 448 pp.
- BRANDT, J. F. 1838. Note sur quatre nouvelles espèces de serpents de la côte occidentale de la mer Caspienne et de la Perse septentrionale, découvertes par M. Kareline. *Bulletin scientifique publié par l'Académie Impériale des Sciences de Saint-Petersbourg* 3 (16): 241-244.
- CLARK, R. 1990. A report on herpetological observations in Afghanistan. *British Herpetological Society Bulletin* 33: 20-42.
- DISI, A. M. 1993. A contribution to the herpetofauna of Jordan. V. New records of three colubrid snakes from Jordan. *The Snake* 25 (2): 109-113.
- GASPERETTI, J. 1988. Snakes of Arabia. *Fauna of Saudi Arabia* 9: 169-450.
- GRAY, J. E. 1833-1834. Illustrations of Indian Zoology: chiefly selected from the collection of Major-General Hardwicke. London, Adolphs Richter & Co. and Parbury, Allen & Co.
- HALLERMANN, J., SCHMITZ, A., DIRKSEN, L. & UETZ, P. 2001. Liste der Neubeschreibungen von Reptilien des Jahres 2000 mit Nachträgen des Jahres 1999. *Elaphe* N.F. 9 (2): 40-45.
- INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE 1999. International code of zoological nomenclature (4<sup>th</sup> ed.). London, The International Trust for Zoological Nomenclature, XXIX + 306 pp.
- JAN, G. 1863. Elenco sistematico degli ofidi descritti e disegnati per l'Iconografia generale. Milano, A. Lombardi, VII + 143 pp.
- KHAN, M. S. 1997. Taxonomic notes on Pakistani snakes of the *Coluber karelini-rhodorachis-ventromaculatus* species complex: a new approach to the problem. *Asiatic Herpetological Research* 7: 51-60.
- KHAN, M. S. & AHMED, N. 1987. On a collection of amphibians and reptiles from Baluchistan, Pakistan. *Pakistan Journal of Zoology* 19 (4): 361-370.
- KHAN, M. S. & KHAN, A. Q. 2000. Three new subspecies of snakes of genus *Coluber* from Pakistan. *Pakistan Journal of Zoology* 32 (1): 49-52.
- LATIFI, M. 1991. The snakes of Iran [1985]. LEVITON, A. E. & ZUG, G. R. (eds). *Oxford (Ohio), Society for the Study of Amphibians and Reptiles*, VII + 159 pp. [translated from Farsi].
- LATIFI, M. 2000. Snakes of Iran (3<sup>rd</sup> revised ed.). *Teheran* [in Farsi].
- LEVITON, A. E. 1959. Report on a collection of reptiles from Afghanistan. *Proceedings of the California Academy of Sciences* [4] 29 (12): 445-463.
- LEVITON, A. E. & ANDERSON, S. C. 1961. Further remarks on the amphibians and reptiles of Afghanistan. *The Wasman Journal of Biology* 19 (2): 269-276.
- MERTENS, R. 1969. Die Amphibien und Reptilien West-Pakistans. *Stuttgarter Beiträge zur Naturkunde* 197: 1-96.

- MINTON, S. A., Jr. 1966. A contribution to the herpetology of West Pakistan. *Bulletin of the American Museum of Natural History* 134 (2): 29-184.
- NILSON, G. & ANDRÉN, C. 1981. Die Herpetofauna des Kavir-Schutzgebietes, Kavir-Wüste, Iran. *Salamandra* 17 (3/4): 130-146.
- SCHÄTTI, B. 1988. Systematics and phylogenetic relationships of *Coluber florulentus* (Reptilia, Serpentes). *Tropical Zoology* 1 (1): 95-116.
- SCHÄTTI, B. 2005. Morphology and systematics of *Platyceps rogersi* (Anderson, 1893) – a review of the situation (Squamata: Colubridae). *Herpetozoa* 17 (3/4) [2004]: 161-174.
- SCHÄTTI, B. & MCCARTHY, C. 2004. Saharo-Arabian racers of the *Platyceps rhodorachis* complex – description of a new species (Reptilia: Squamata: Colubrinae). *Revue suisse de Zoologie* 111 (4): 691-705.
- SCHÄTTI, B. & UTIGER, U. 2001. *Hemerophis*, a new genus for *Zamenis socotrae* Günther, and a contribution to the phylogeny of Old World racers, whip snakes, and related genera (Reptilia: Squamata: Colubrinae). *Revue suisse de Zoologie* 108 (4): 919-948.
- SMITH, M. A. 1943. The Fauna of British India, Ceylon and Burma, including the whole of the Indo-Chinese sub-region. Reptilia and Amphibia. Vol. III. Serpentes. London, Taylor & Francis, XII + 583 pp.
- TERENTJEV, P. V. & CHERNOV, S. A. 1949. Opređelitel presmykajuszczikhjsja i zemnovodnykh [Determination key to reptiles and amphibians] (3<sup>rd</sup> enlarged ed.). Moscow & Leningrad, Sovjet Science Press, 340 pp.

APPENDIX. Comparative sample of *Platyceps karelini*. AFGHANISTAN: BMNH 73.1.7.10 (“Kila-i-Fath, Seistan”, juv.), 82.3.20.2 (Kandahar, ♂), 86.9.21.102 (Tirpul, ♀), 86.9.21.103 (“Kilki”, ♀); CAS 84634-36 (Chah-i-Anjir, ♀, juv. ♂♂), 103785 (Herat – Islam Qala, ♀), 120540 (vicinity of Tashkurghan, ♂), 120714 (45 km E Herat, ♀); SMF 64629 (Darzi Chah, juv. ♂). IRAN: FMNH 141604 (Pahlavi Dezh, ♀); NMW 25446.3 (“Vor Neh”, juv.), 25446.4 (“Zirkuch”, ♀), 25446.5 (“Gulu Chakak”, ♀), 25446.6 (“Tscha Sam”, ♂). PAKISTAN: AMNH 96219 (“near Pishin”, ♂); SMF 62924 (Khuzdar, ♂), 62940 (Quetta, ♀).